Presentation to Transportation Committee

Connecticut Department of Transportation

June 30, 2021

Agenda

- Opening Remarks
- 2021 - 2025 Capital Plan Overview
- “Roadmap” into the Capital Plan
- Federal Infrastructure Investment Update

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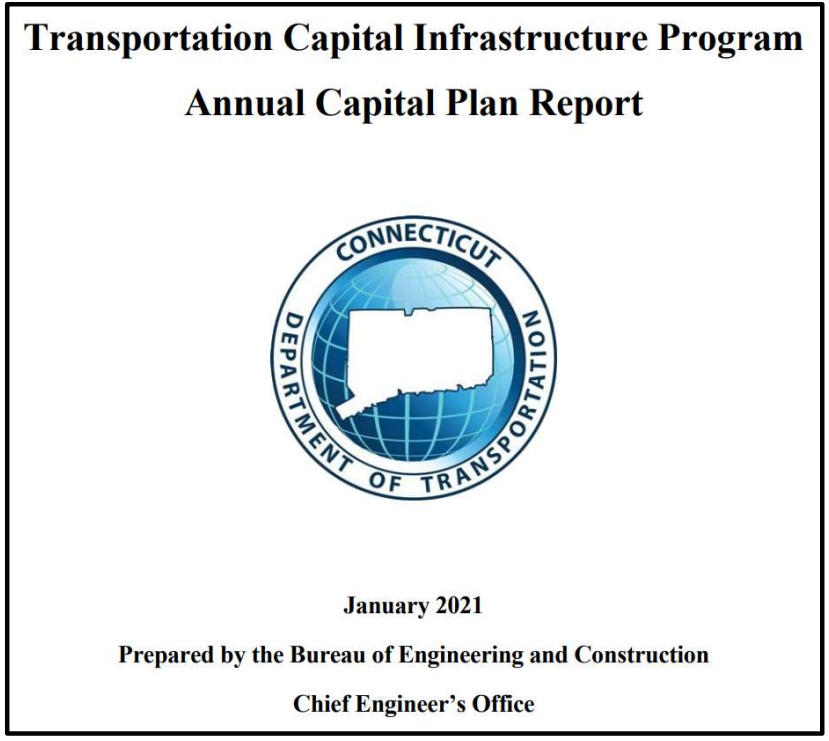
- Opening Remarks
- **2021 - 2025 Capital Plan Overview**
- “Roadmap” into the Capital Plan
- Federal Infrastructure Investment Update

What is CTDOT's Capital Plan?

- Annual report prepared by CTDOT to inform stakeholders about the past year's program and outline the plan for the upcoming 5-year period.
- Includes historical achievements, trends, and major issues. Describes the Department's plan to address critical transportation needs and current challenges associated with maintaining CT's aging transportation infrastructure.
- Details a comprehensive financial summary of Capital Program expenditures of both State and Federal dollars and across all modes.
- Data presented in report is based on the Federal Fiscal Year (FFY - October 1 to September 30) rather than calendar year or the State Fiscal Year (SFY – July 1 to June 30).



Components of the Capital Program

Programmed

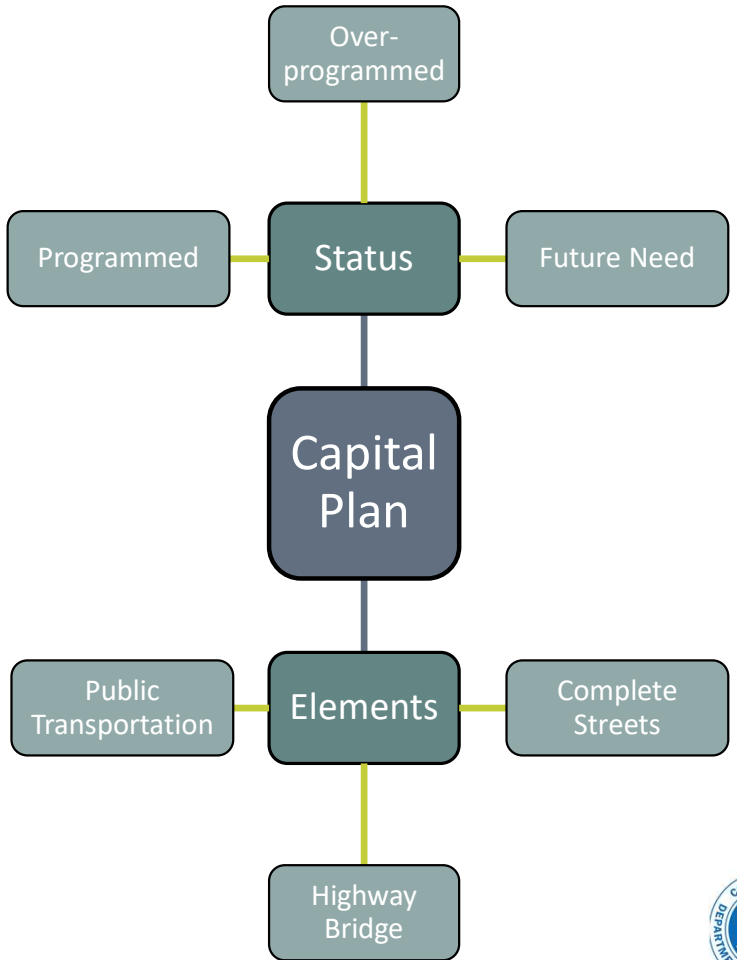
- Actively being advanced through design process toward construction or delivery.
- Projects necessary to maintain an acceptable state of good repair.
- Projects which are federal or state eligible and there is a reasonable expectation of funding and project delivery to construction.

Overprogrammed

- Projects (and/or phases of projects) which are or will be actively developed, but there is no identified or planned construction funding source.
- Approximately $1.8 Billion worth of capital improvements

Future Needs

- Approximately $15-$18 Billion worth of capital improvements
- New initiatives for which a project/program scope has not been defined.
- Projects and programs identified in the long-range plan or published studies which are not funded.



Example Projects in the Capital Plan

Programmed – Public Transportation

Service Improvements

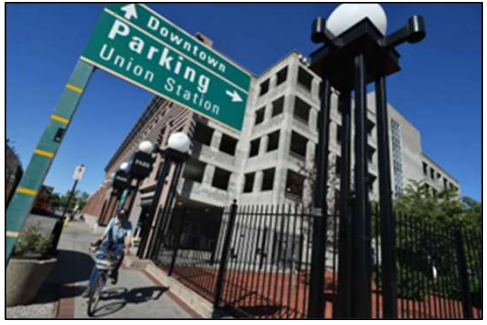
- CT*transit* Move New Haven Infrastructure Improvements Phase 1
- New Haven Line Speed Improvements, Phase 1
- Traffic Signal Technology Improvements, Statewide

Equipment Purchases

- New coaches for rail fleet
- Bus Replacements (diesel & electric)
- Final M8 Deliveries

Station and Facility Improvements

- Stamford Parking Garage
- Hartford Line – Windsor Locks Station
- New Haven Line – Darien Station Improvements
- Bus Shelters, Statewide
- New Haven Line Signal Improvements
- New Haven Union Station Campus Improvements



Example Projects in the Capital Plan

Programmed – Highway/Bridge

Annual Programs

- Capital Resurfacing Program, Statewide
- General Asset SOGR Programmatic Improvements
- LOTCIP & Local Programs

FFY 2021

- Route 8 Resurfacing & Safety Improvements, Derby
- Route 2 Resurfacing & Safety Improvements, East Hartford
- I-95 Goldstar Bridge, New London
- Walk Bridge and Supporting Projects, Norwalk

FFY 2022 & 2023

- I-91/I-691/Route 15 Interchange, Meriden
- I-84 Interchange 17 Improvements, Middlebury
- I-95 at Route 161 Interchange Improvements, East Lyme
- Route 9 Traffic Signal Removal, Middletown
- I-95 Bridge Widening & Operational Improvements, West Haven

Note: Schedules as shown in Capital Plan, subject to revision over the course of project development

Example Projects in the Capital Plan

Programmed – Complete Streets

Programs

- Community Connectivity Grant Program
- LOTCIP
- ADA Transition Plan

East Coast Greenway Trail Sections

Moosup Valley State Park Trail

- Towns of Plainfield and Sterling

Farmington Canal Heritage Trail

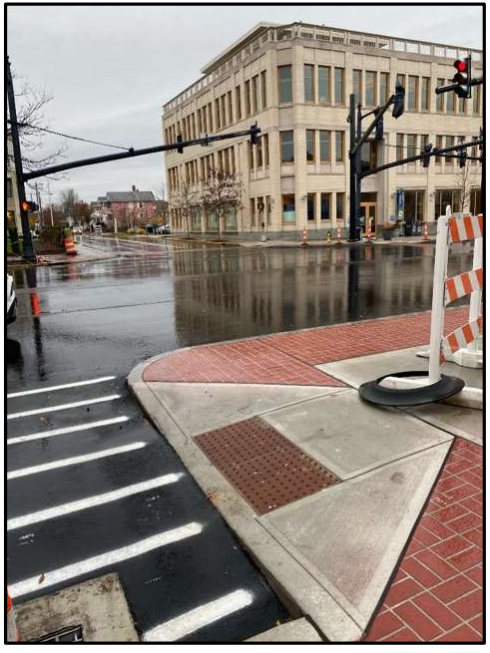
- Town of Southington
- Town of Plainville
- Town of Bloomfield and Simsbury (spur)

Hop River State Park Trail

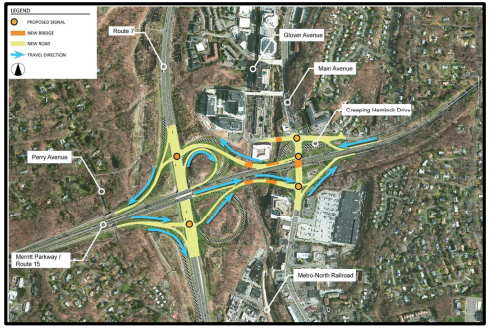
- Town of Columbia

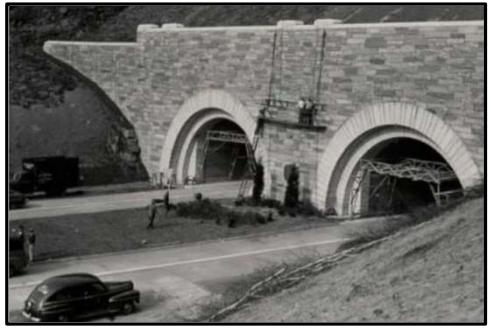
Quinebaug River Trail

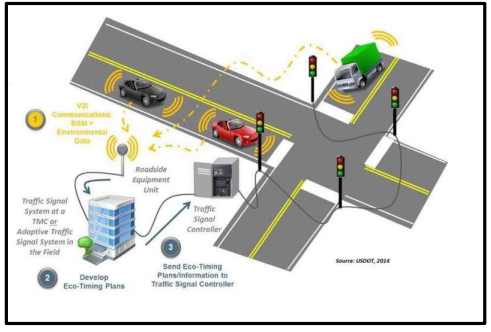
- Town of Killingly



Example Projects in the Capital Plan







Overprogrammed, All Modes

- Additional Hartford Line Stations
- CT*transit* Move New Haven Infrastructure Improvements Phase 2
- Rail Fleet – Dual Mode Locomotives for Danbury & Waterbury Lines
- Hartford Line Phase 3B Double Tracking – Windsor to Windsor Locks
- Route 7 & 15 Interchange, Norwalk
- Community Connectivity Program
- Computerized Traffic Signal System Replacement/Upgrade Program
- Heroes Tunnel Improvement Project, Woodbridge/New Haven
- I-95 Interchange 16 Improvements, Norwalk

Example Projects in the Capital Plan

Future Needs, All Modes

- Route 1 High Performance Bus Program
- Conversion to an Electric Bus Fleet
- CTtransit Move New Haven Infrastructure Impvts (Phase 3)
- New Haven Line – Additional Track Speed Improvements
- Rail Fleet – 71 Add. Coaches & 6 Dual Power Locomotives
- Rail Maintenance Shops and Storage Yard Improvements
- Future Hartford Line Stations
- Bus Shelters with Seats and Lights, Statewide
- Route 15 - Remove Stop Sign on Entrance/Exit Ramps
- I-95 & Route 7 Interchange Improvements, Norwalk
- Realign I-95 and Replace Bridge 00032, Stamford
- I-84 Reconstruction, Danbury
- I-84 and Route 8 Interchange Modifications, Waterbury
- I-95 Improvements Exits 19-27a, Fairfield/Bridgeport
- I-95 Improvements East of New Haven
- Roadway System Improvements as a result of the Greater Hartford Mobility Study

84 new mix

I-84 Danbury Project

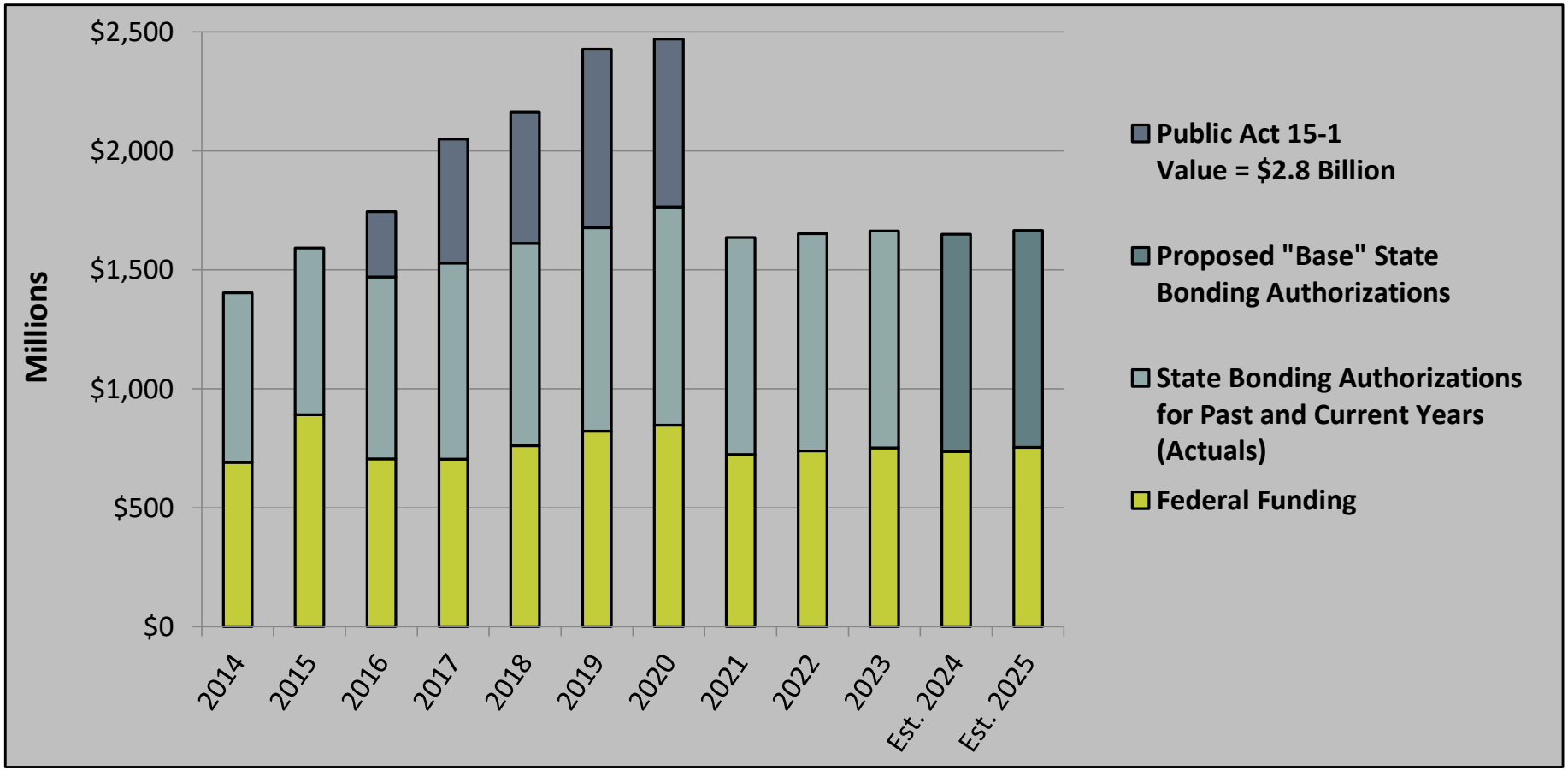
CT transit

MOVE NEW HAVEN Transit Mobility Study

GREATER HARTFORD MOBILITY STUDY

HARTFORD LINE CT rail

Capital Program Funding Summary - Authorizations



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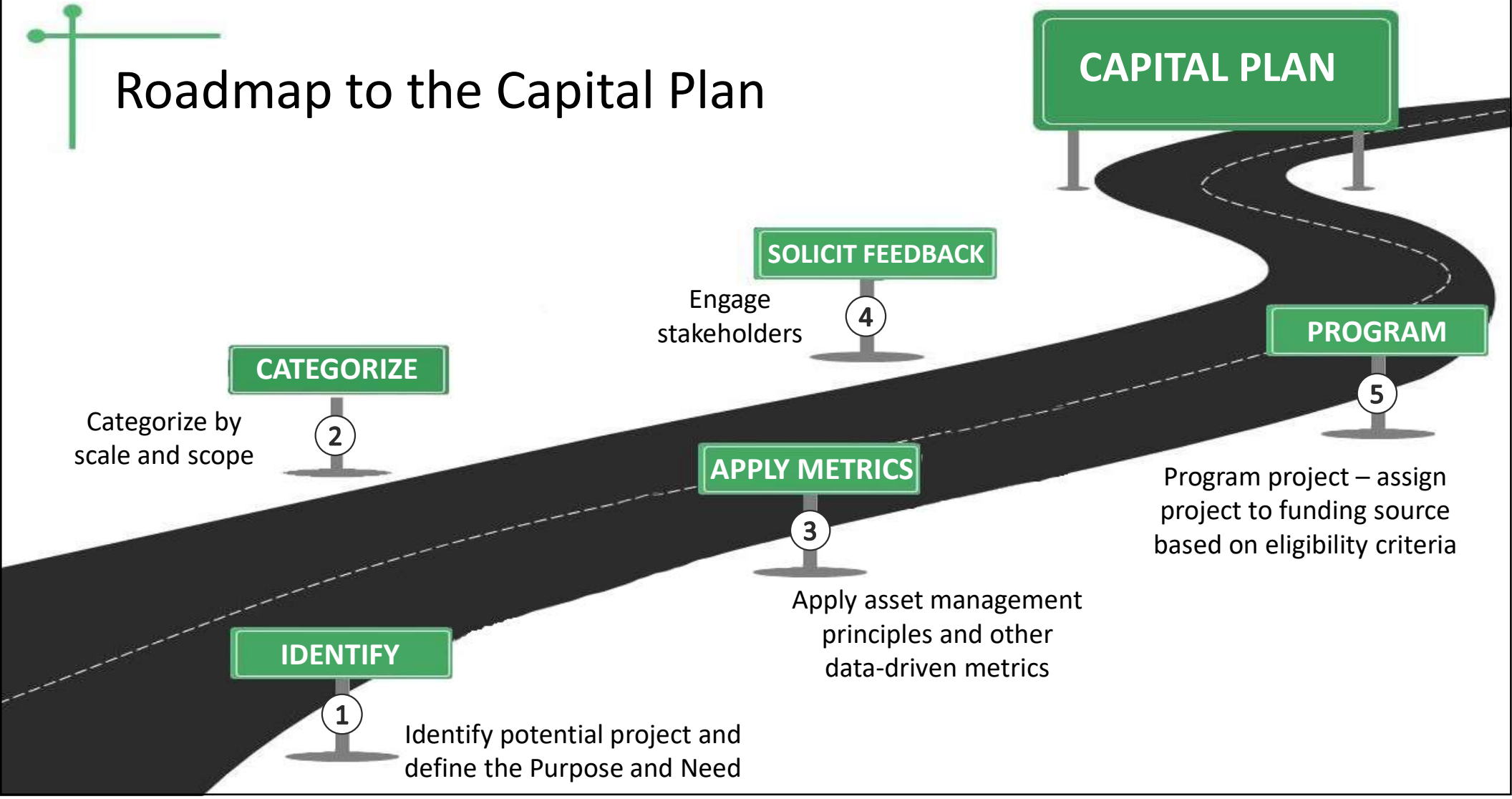
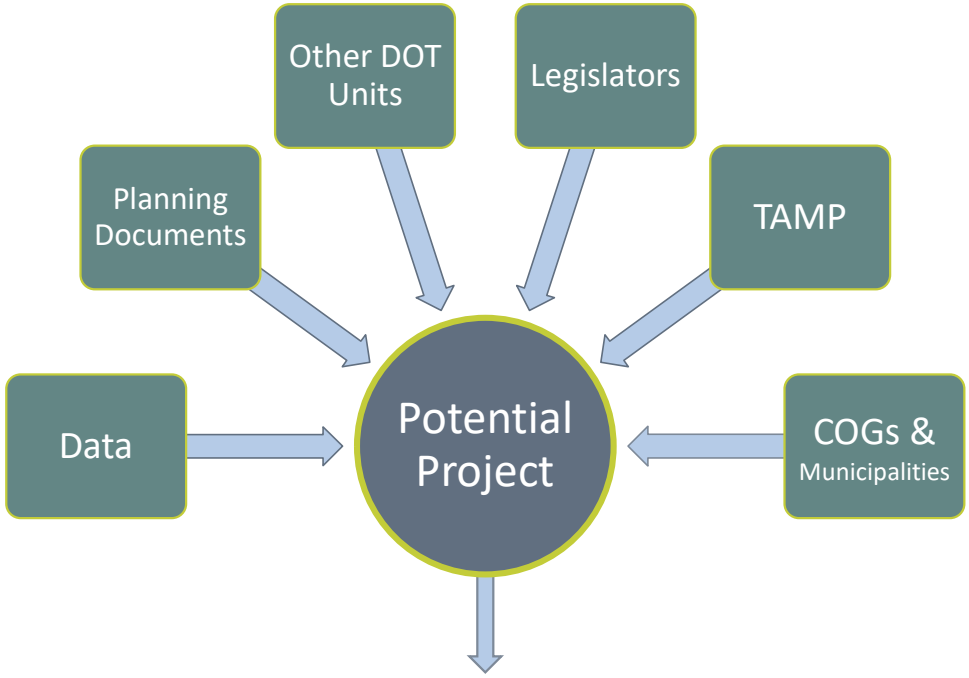
- Opening Remarks by Commissioner Giulietti
- 2021 - 2025 Capital Plan Overview
- **“Roadmap” into the Capital Plan**
- Federal Infrastructure Investment Update

Roadmap to the Capital Plan



Road Map to the Capital Plan



Define

Purpose and Need

Step 1: Identify

Potential projects and initiatives are identified from many sources:

- Statewide or Regional Planning Documents
- Corridor/Feasibility Studies
- Federal Regulations and Mandates
- Councils of Government (COGs)
- Legislator Requests
- Municipality Requests
- Data-Driven Analysis
  - **High Crash Rates**
  - **Congestion**
  - **State of Good Repair**
  - **Sub-Standard Geometrics**

Road Map to the Capital Plan

What is a *PURPOSE AND NEED* Statement?

"Purpose" can be defined as the reason to conduct the project

e.g.: The *purpose* of the project is to reduce congestion and improve mobility at the intersection of Town Road and Main Street

"Need" can be defined as the identification of deficiencies of the project supported by facts or data

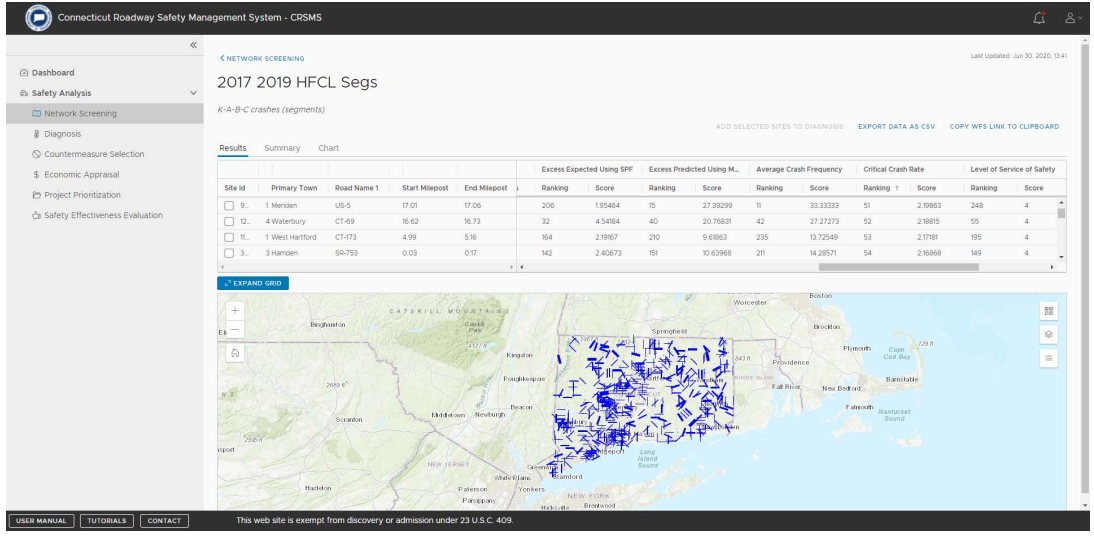
e.g.: This project is *needed* because the capacity of the intersection of Town Road and Main Street is inadequate to meet current and future traffic volumes, resulting in congestion, reduced mobility and Level of Service D on this stretch of highway.

Road Map to the Capital Plan – Step 1 : Identify

Identification Example : Improve Safety – Crash Reduction

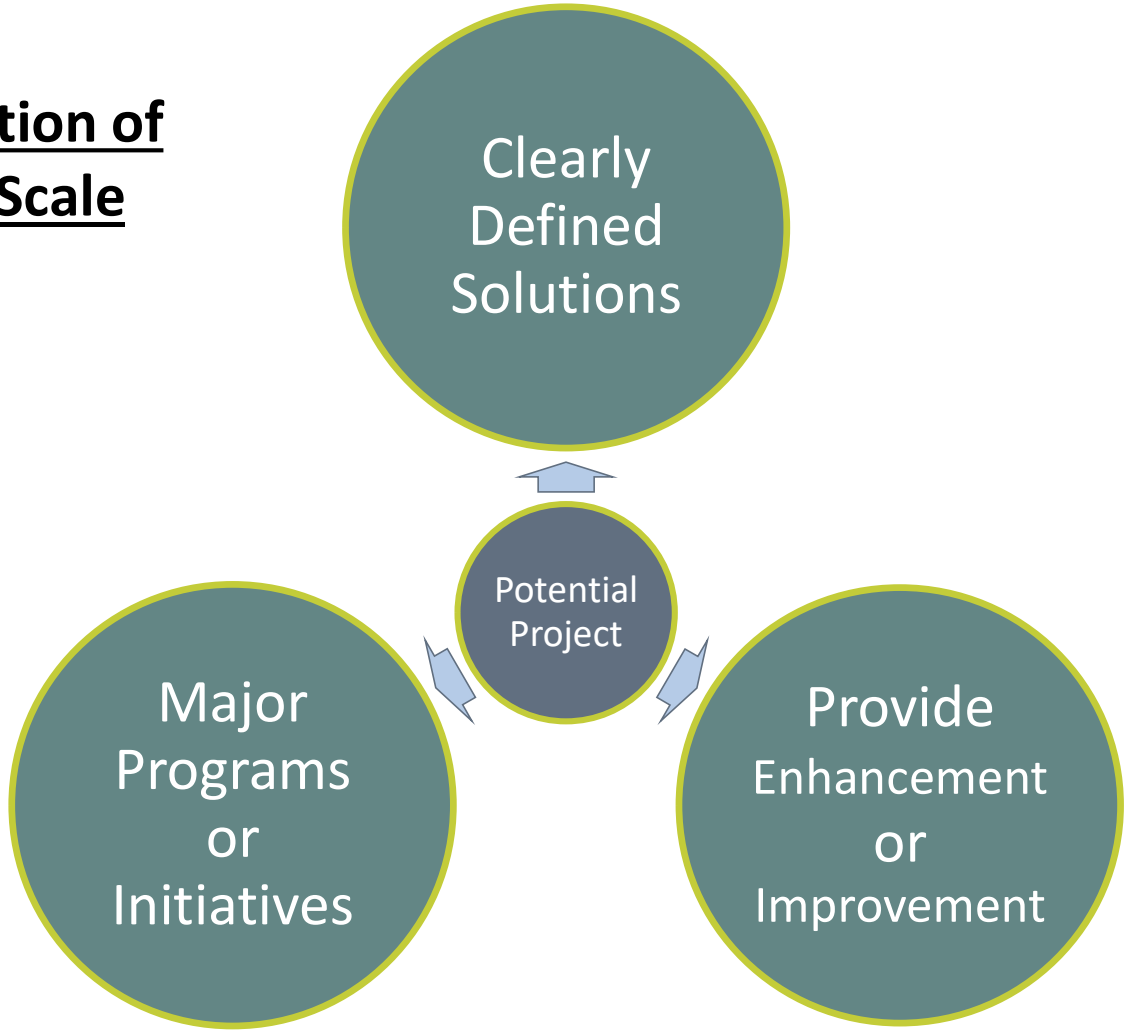
Department uses the Connecticut Roadway Safety Management System (CRSMS) – Developed in partnership with UCONN – to screen the entire roadway network for locations with highest potential for crash reduction

- Not just “total” number of crashes, but evaluate crash-type and injuries
- Focus on Fatal and Serious Injury Crash reduction
- Determines if crash-type is “Over-Represented” i.e. other locations with similar characteristics have fewer crashes
- Used to develop “High Frequency Crash Location” (HFCL) list for further investigation and review



Road Map to the Capital Plan

Step 2: Categorization of Project by Scale and Scope



Road Map to the Capital Plan – Step 2 : Categorize

Type A : Clearly Defined Solutions

Projects that provide condition upgrade (SOGR), improve general safety conditions, or address federal mandates.

- Initiation and prioritization are data or condition driven with few alternatives to consider
- Purpose and Need is largely condition-based
- Primary metrics considered : Condition and Safety
- Example Project Types:

  Bridge Rehabilitation

  Traffic Signal Upgrade or Replacement

  Pavement Rehabilitation or Preservation

  Railroad Safety and Federal Mandates

  Maintenance of Transit Assets

Road Map to the Capital Plan – Step 2 : Categorize

Type B : Provide Enhancement or Improvement

Projects that enhance the transportation network, add or significantly modify a facility, where the solutions are less straight forward.

- Purpose and Need requires investigation & must be clearly defined
- Initiation requires development and comparison of alternatives and careful consideration of costs.
- Primary metrics considered : Safety and Mobility
- Example Project Types:

  Interchange Reconfigurations

  Highway and Bridge Improvements

  Rail Line Enhancement and Expansion

  Improvement to Multimodal Transportation

  Electrification of Statewide Network

Road Map to the Capital Plan – Step 2 : Categorize

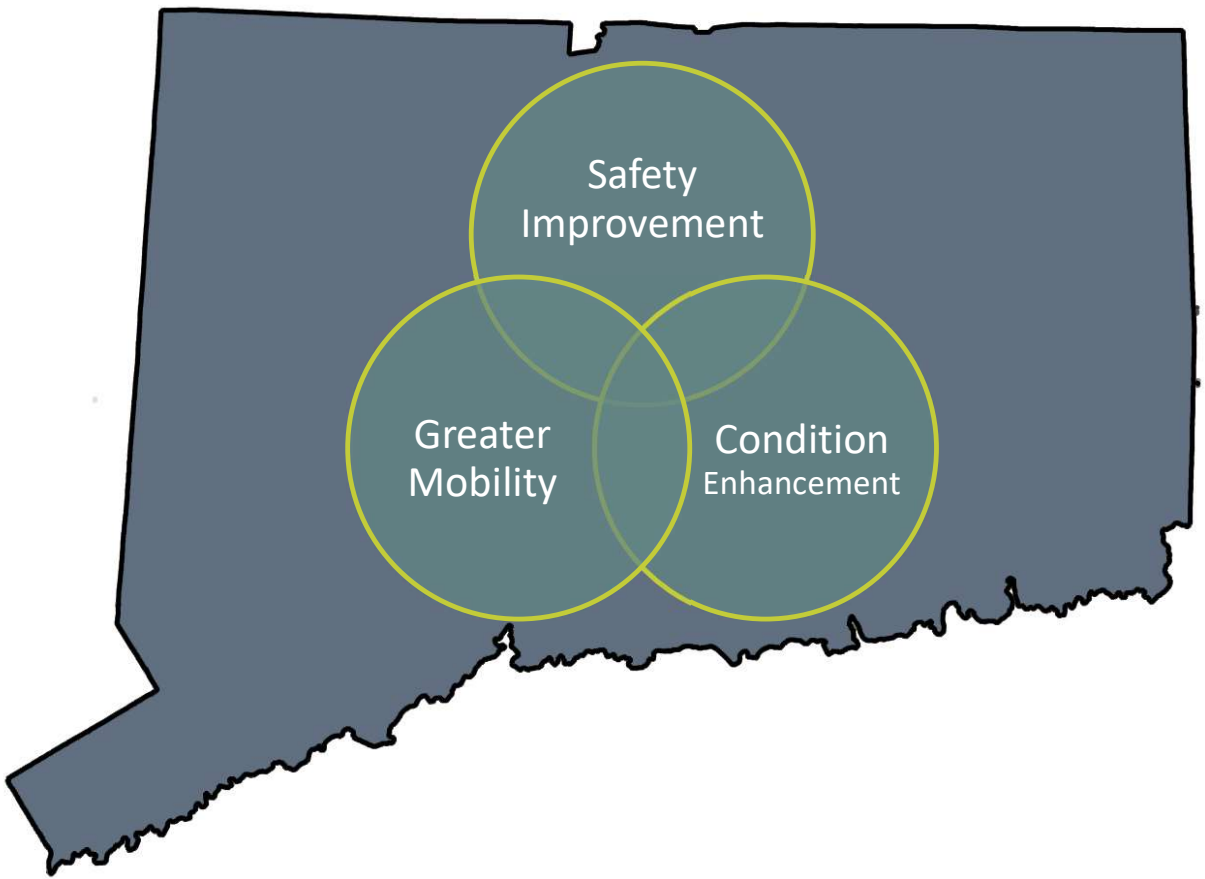
Type C : Major Programs or Initiatives

Significant initiatives that span all modes of transportation. Solutions are multi-faceted, challenging, costly, and likely take substantial time to implement.

- Vision and Goals are developed for the overarching program or initiative. Once individual projects are identified within the program, a succinct Purpose and Need is developed for each project.

- Primary metrics considered : Condition, Safety, and Mobility with influence from other elements.

Road Map to the Capital Plan



Step 3: Apply Metrics

The overarching goals of the Department define the metrics by which each project is measured, but quantification of those metrics differs by project type and mode.

Primary Metrics:

- **Increase Mobility for All Users**
- **Improve Safety Across All Modes**
- **Maintain or Enhance Condition of Assets**

Other Factors and Considerations:

- **Freight Movement Around the State**
- **Economic Development**
- **Community Input and Involvement**

Road Map to the Capital Plan – Step 3 : Apply Metrics

Metric Example : Improve Mobility – Congestion

Free Flow Travel Time versus Current Year Travel Time

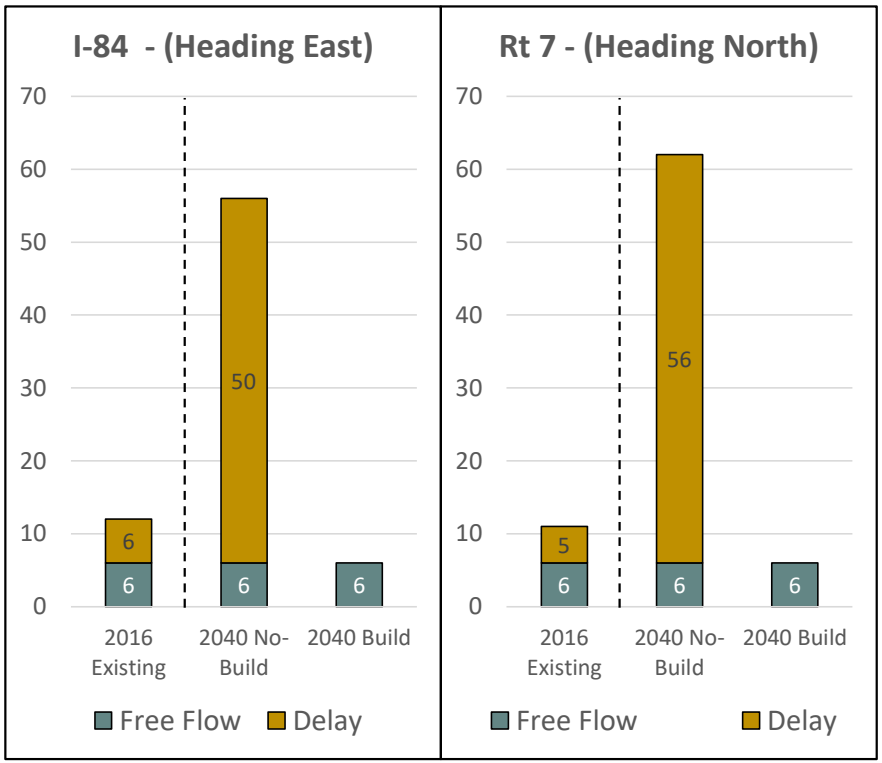
The unit of measure for congestion will be measured in delay in traffic (minutes) between free flow time and current year travel time.

Free Flow Travel Time versus Future Year Travel Time

The unit of measure for congestion will be measured in delay in traffic (minutes) between free flow time and future year travel time.

- *I-84 (going east)*
  - *What it should take – 6 minutes*
  - *What it takes today – 12 minutes*
  - *What it will take in 2040 – 56 minutes*
  - *What it will take with Lane Add option - 6 minutes*
- *Route 7 (going north)*
  - *What it should take – 6 minutes*
  - *What it takes today – 11 minutes*
  - *What it will take in 2040– 61 minutes*
  - *What it will take with Lane Add option - 6 minutes*

Travel Times Through Corridor
Afternoon Peak Hour



Road Map to the Capital Plan – Step 3 : Apply Metrics

Metric Example: Enhance Condition – Rail Station Improvements

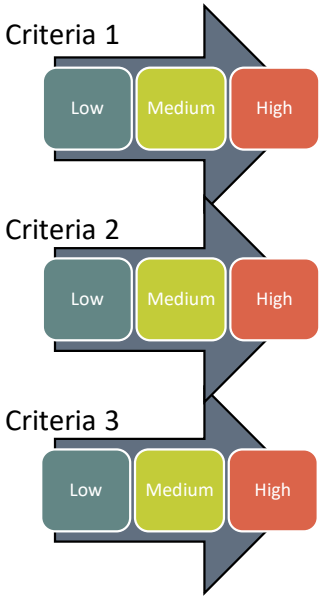
The prioritization of rail station improvement projects is based on three (3) data-driven criteria and the severity of the condition within each. As station improvement projects are implemented, the overall condition of the asset class is improved and can be documented.

Condition Before

Priority Group 1

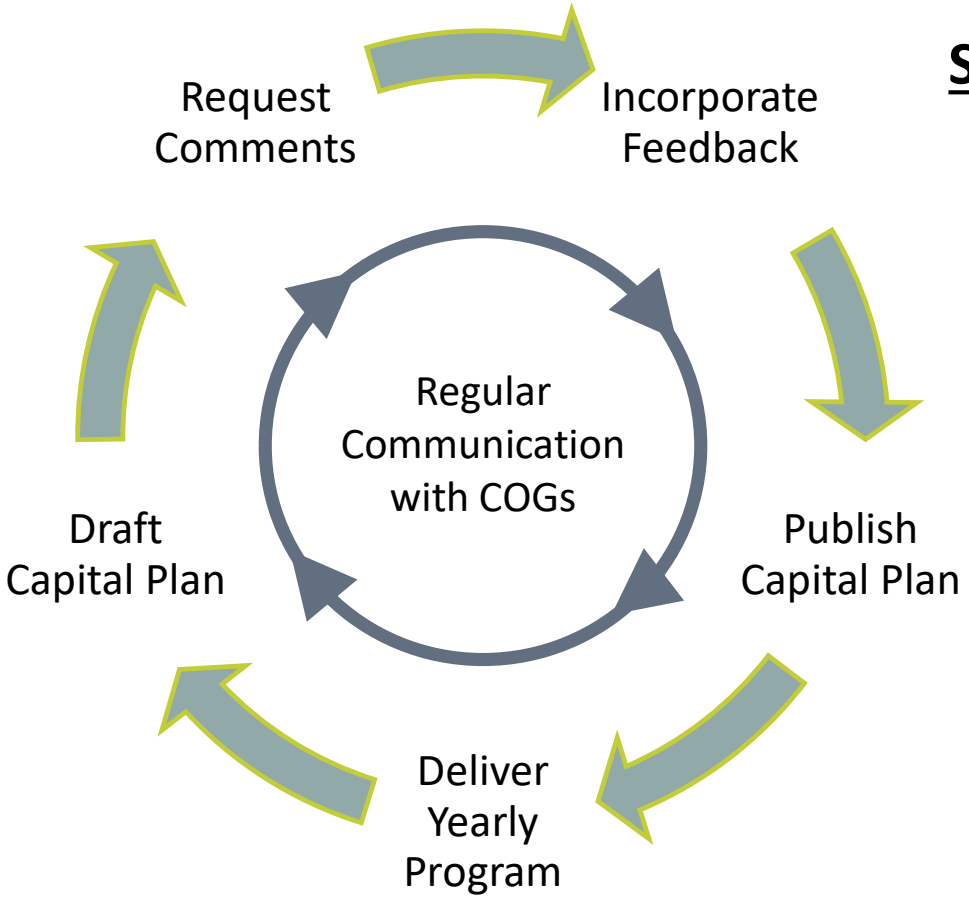
Condition After

Priority Group 5



Priority Group	Program Rank	Station
1	1	Darien
1	2	Westport
1	3	Noroton Heights
1	4	South Norwalk
1	5	East Norwalk
1	6	Rowayton
1	7	Southport
2	8	Green's Farms
2	9	Talmadge Hill
2	10	Greenwich
2	11	Cos Cob
2	12	New Haven State
2	13	Old Greenwich
2	14	Riverside
3	15	Fairfield
3	16	Stratford
3	17	Milford
3	18	Springdale
3	19	Redding
3	20	Wilton
3	21	Cannondale
3	22	Branchville
3	23	Stamford
3	24	Glenbrook
3	25	Bethel
3	26	Beacon Falls
3	27	Ansonia
3	28	Naugatuck
3	29	Branford
3	30	West Haven
4	31	New Haven Union
4	32	Bridgeport
4	33	Waterbury
4	34	Derby-Shelton
4	35	Danbury
4	36	Merritt 7
4	37	Seymour
4	38	New Canaan
5	39	Westbrook
5	40	Madison
5	41	Clinton
5	42	Guilford
5	43	Fairfield Metro

Road Map to the Capital Plan



Step 4: Solicit Feedback

Department Regularly Engages with COGs

- **Monthly Coordination Meetings**
- **STIP/TIP Requests**
- **Coordination and Planning Meetings**

Development of Capital Plan includes Coordination

1. **Information is prepared for inclusion in the Draft Capital Plan**
2. **Draft is distributed to COGs for comment**
3. **Department addresses/replies to comments**
4. **Final version of Capital Plan is prepared**
5. **Capital Plan is Published**

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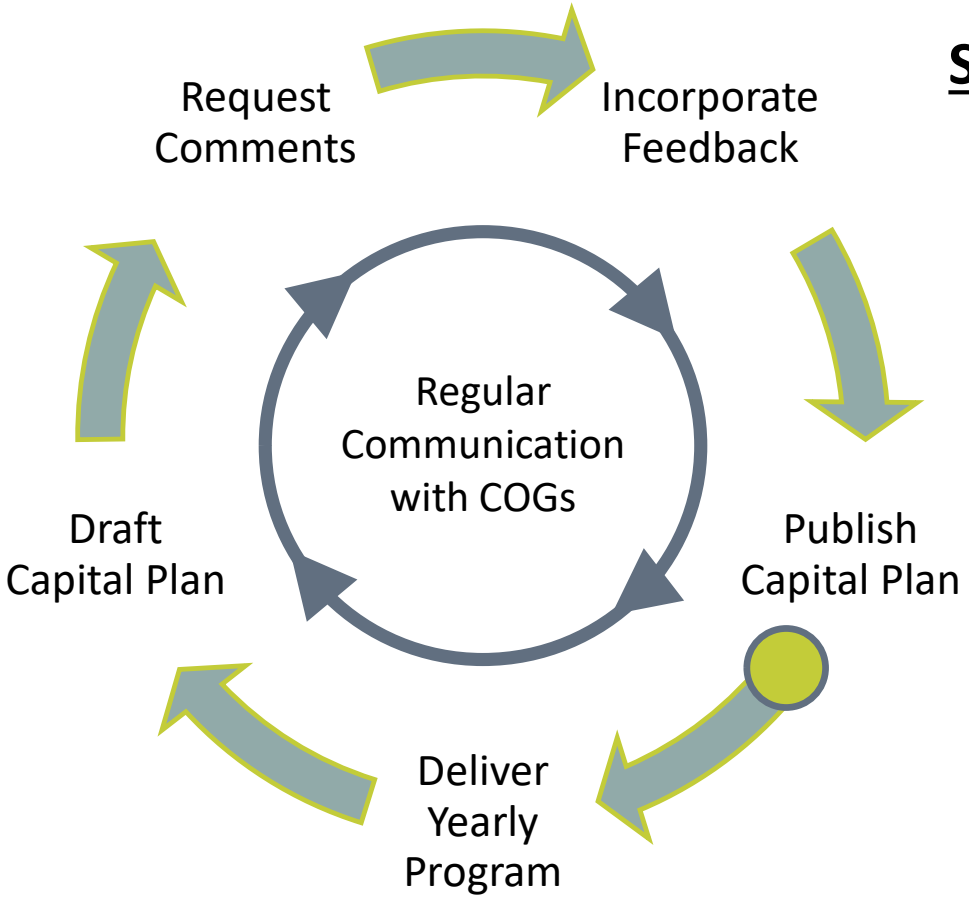

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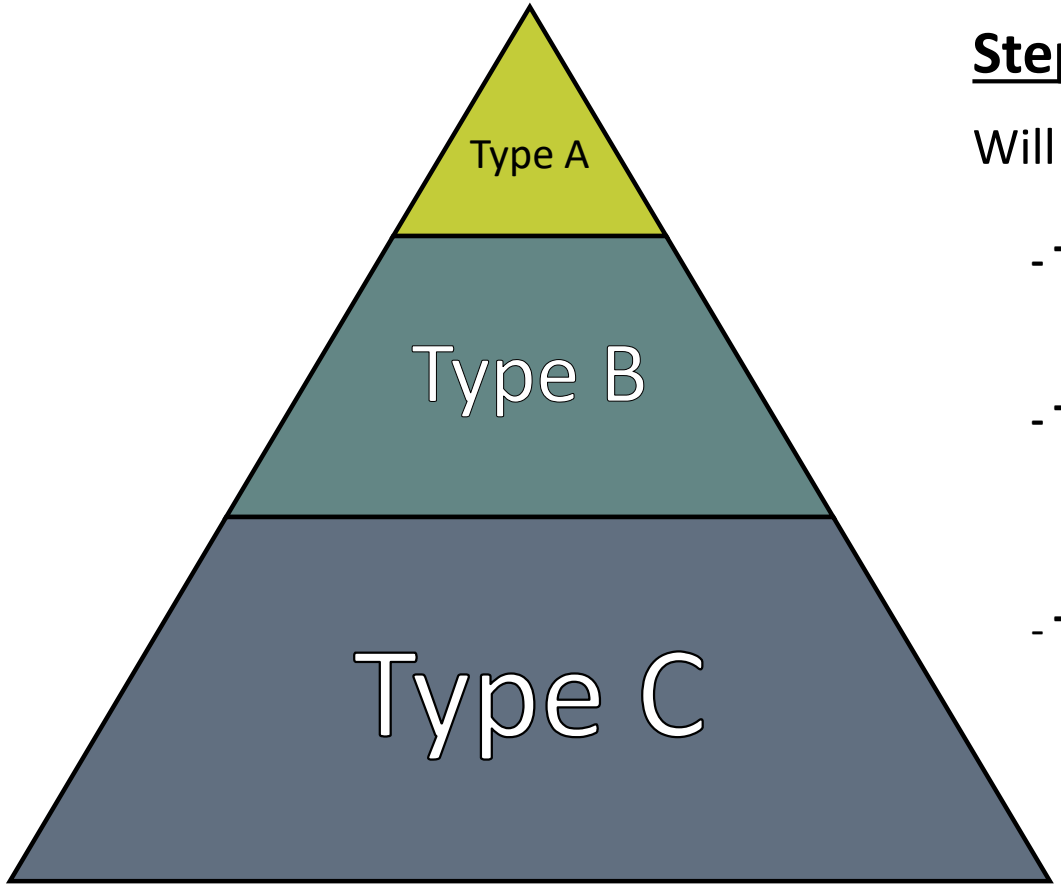

Step 4: Solicit Feedback – Project Level

Will Vary by Project Type

- **Type A : Clearly Defined Solutions**
  Little Pre-Initiation Feedback Requested

- **Type B : Provide Enhancement or Improvement**
  Conversations with Elected Officials and/or Concept-Level Public Meetings

- **Type C : Major Programs or Initiatives**
  Significant Public Involvement effort, often including creation of a Project Advisory Committee (PAC)

Road Map to the Capital Plan – Step 4: Solicit Feedback

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Type B : Provide Enhancement or Improvement

- Conversations with Elected Officials and/or
- Concept-Level Public Meetings

Road Map to the Capital Plan – Step 4: Solicit Feedback

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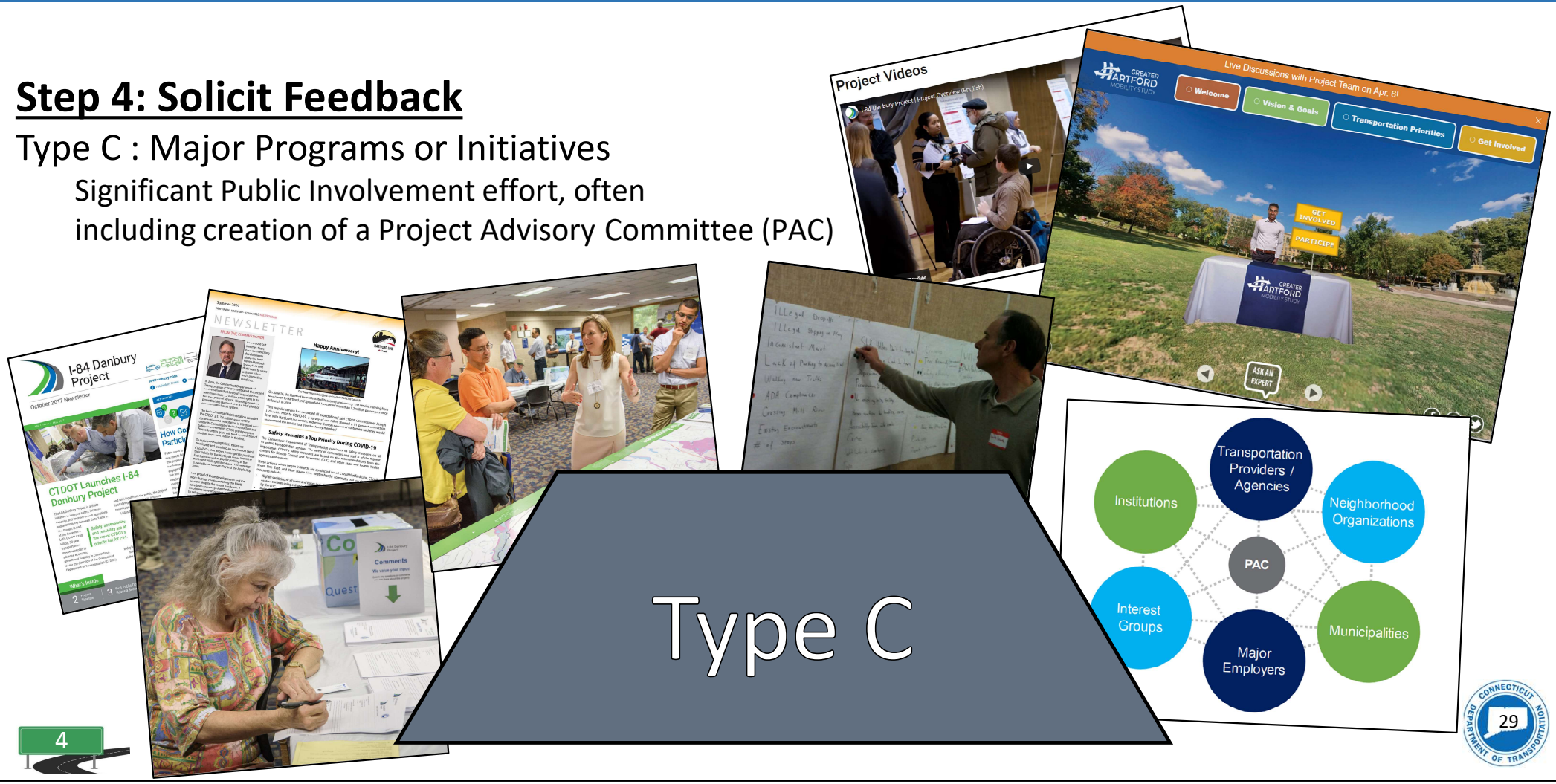

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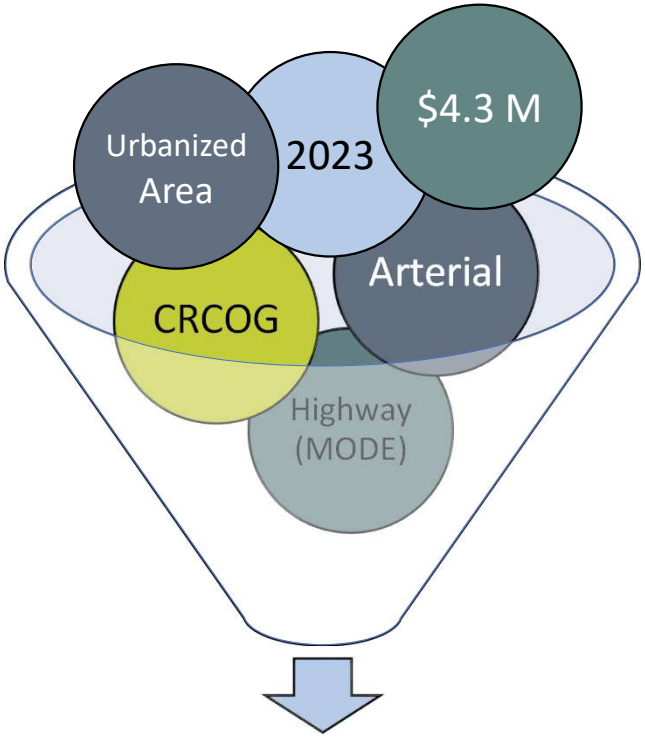


Assign Funding Source(s)

Step 5: Program

What does it mean to "Program" a project?

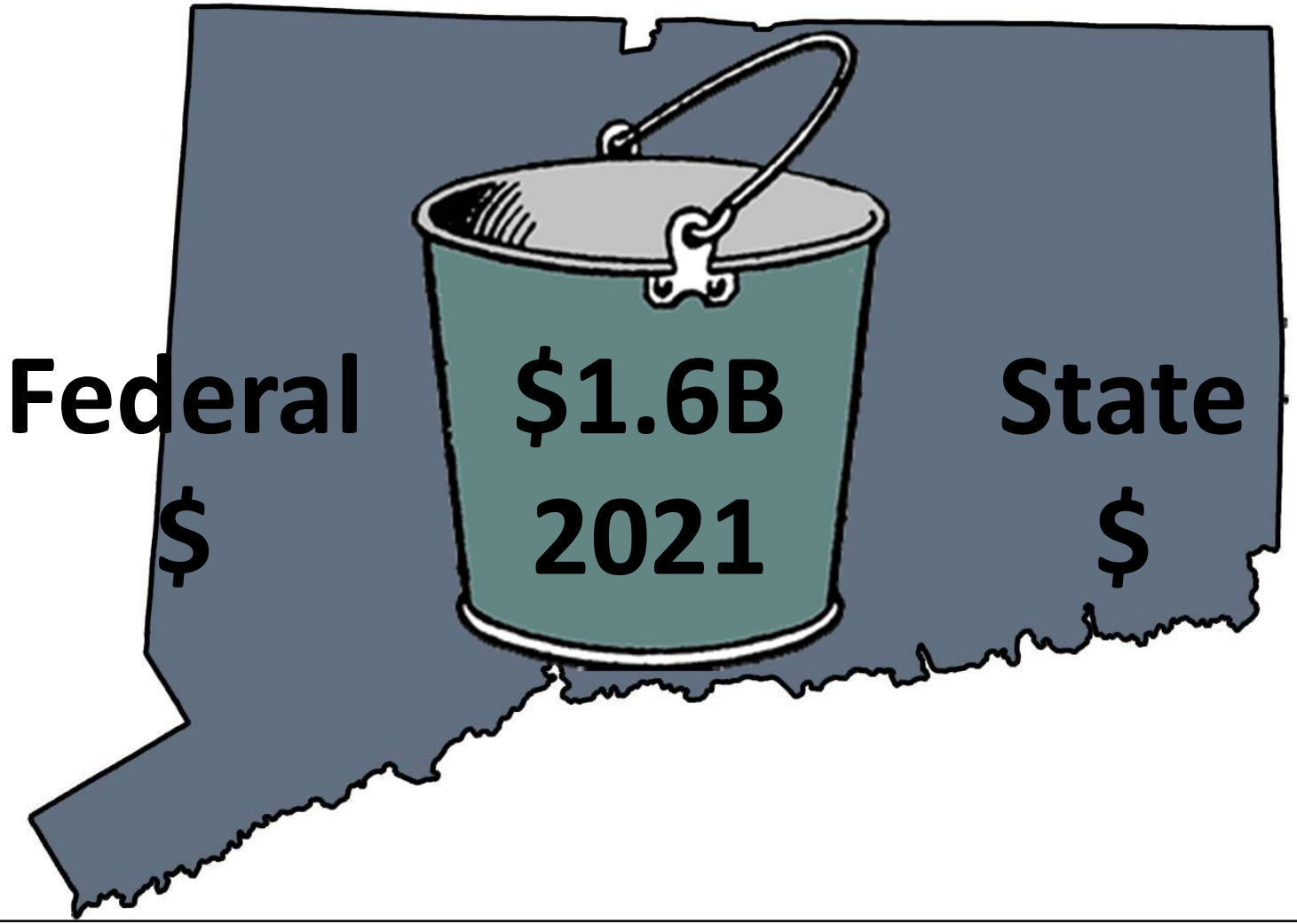
To program is to assign a specific funding source to the estimated costs of a project, drawing down from the anticipated available funding in the year of expenditure.

What are the challenges to Programming?

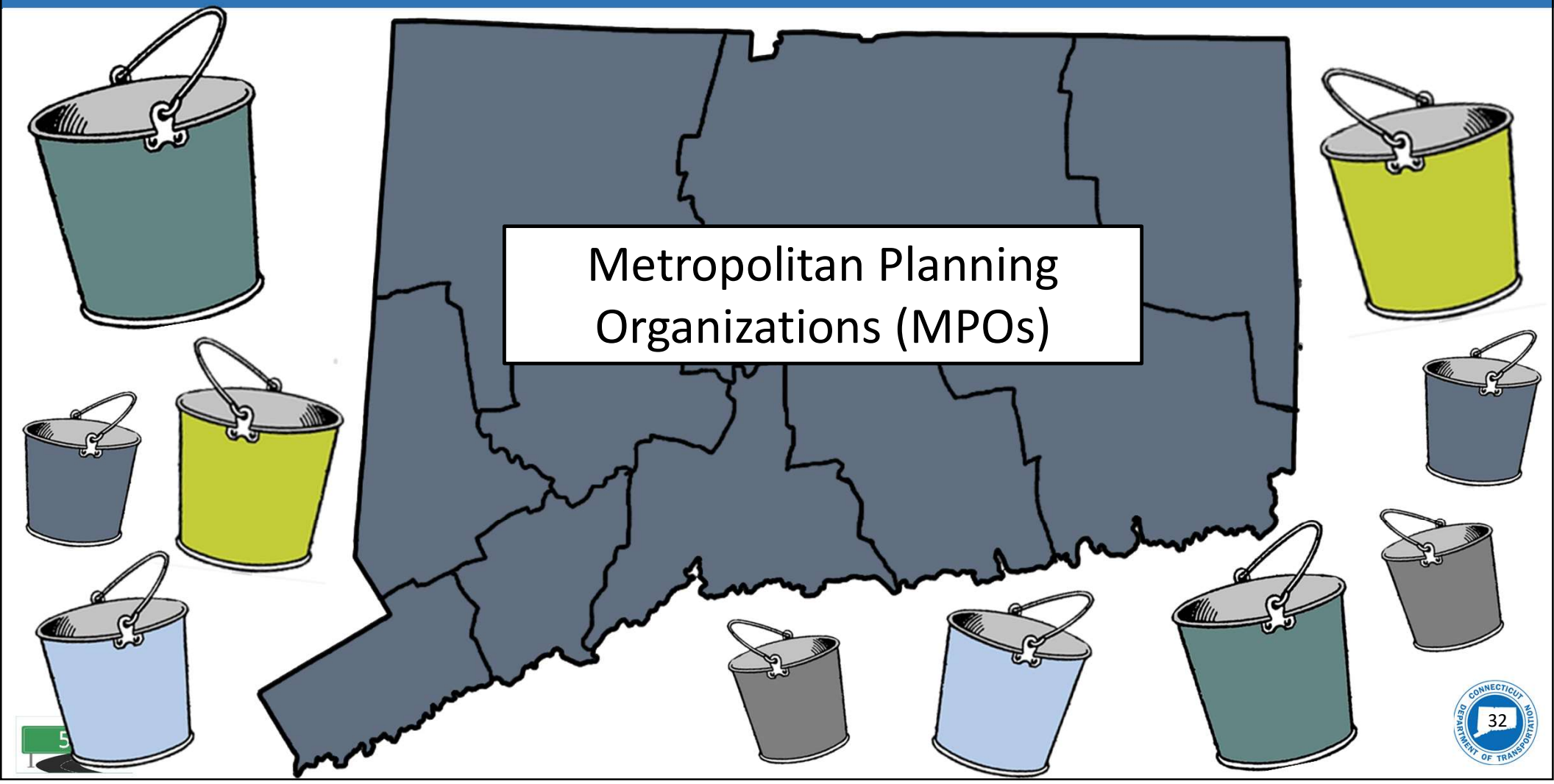
Each funding source or "bucket" has different eligibility requirements

- Mode
- Scope of Work
- Geographic area within the State (MPO)
- Urban vs Rural Characterization
- Cost of Project vs Available Funding in Program
- Functional Classification of the Roadway

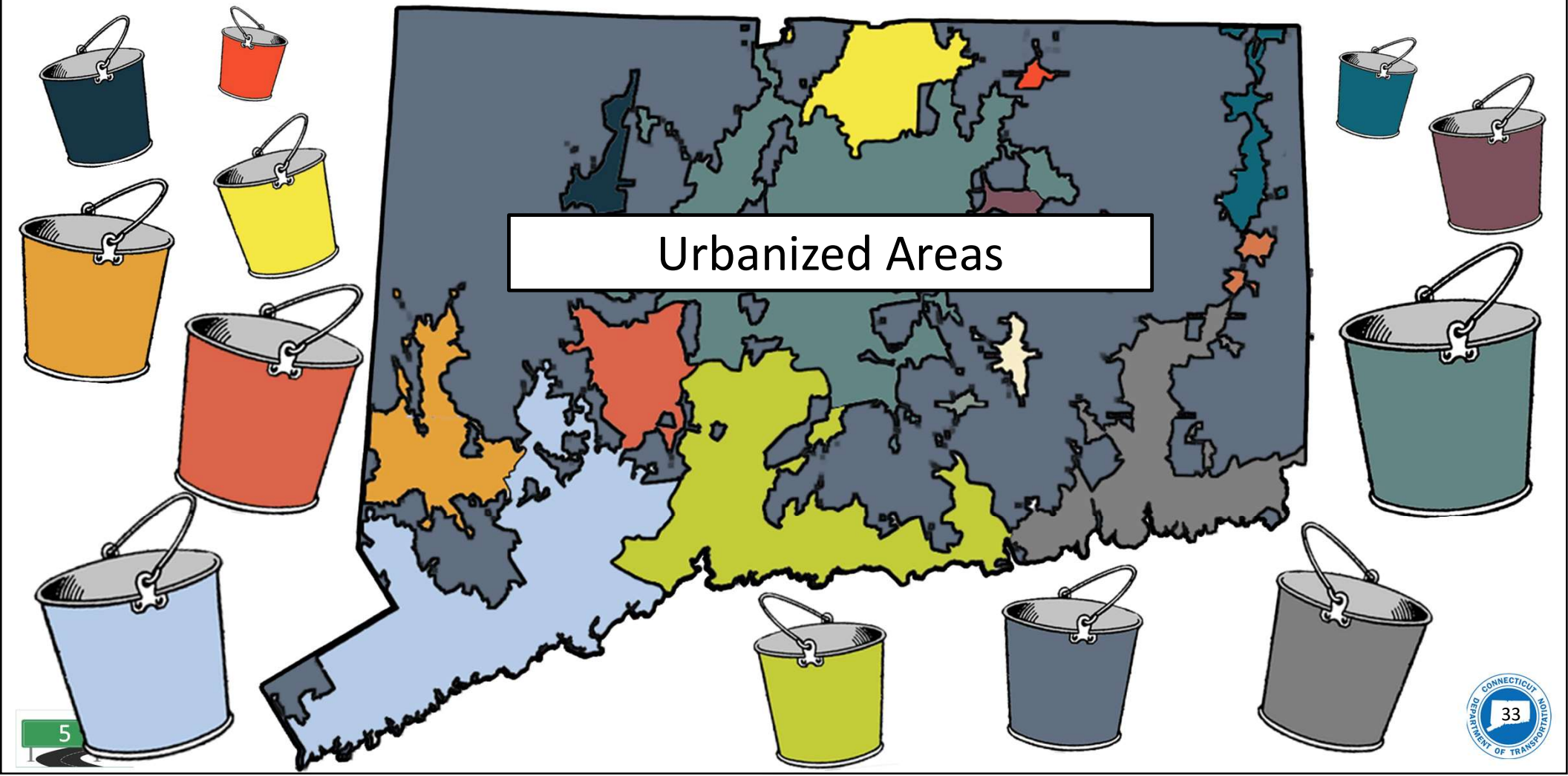
Road Map to the Capital Plan – Step 5: Program



Road Map to the Capital Plan – Step 5: Program



Road Map to the Capital Plan – Step 5: Program



Road Map to the Capital Plan – Step 5: Program

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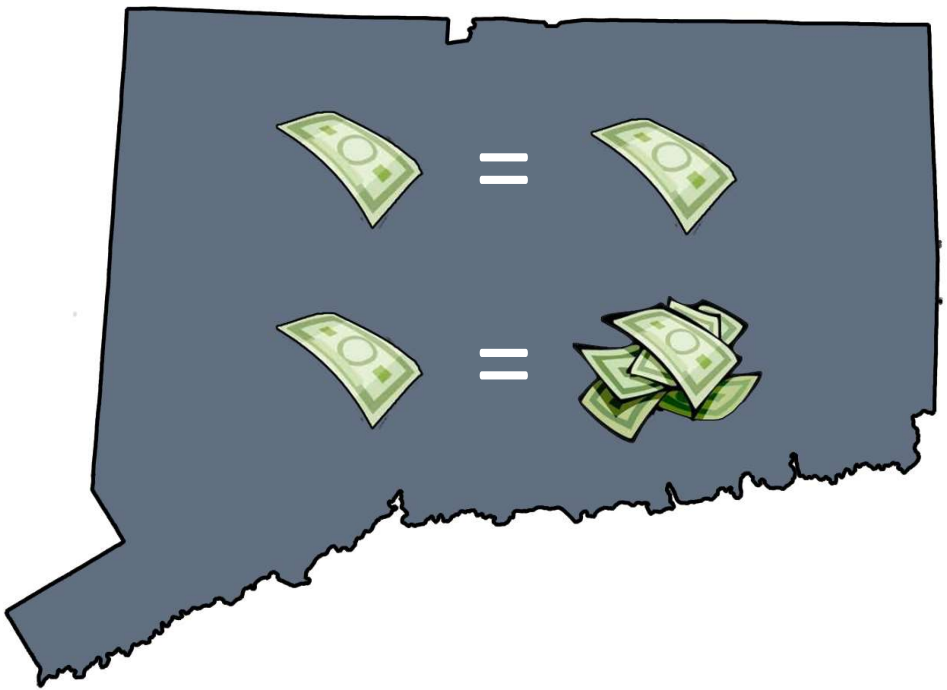

Step 5: Program

If Every Bucket is a Funding Source:

- Over 55 Federal Buckets for 2020 for Highway/Bridge
- 15 State Buckets for all modes
- Each bucket has unique eligibility requirements
- Each bucket has different funding level

Additional Challenges

- Balancing Project Types (SOGR vs. Enhancement)
- Compare within Modes and Divisions
- Provide Regional/Geographic diversity around State

Always tries to maximize spending available federal funds

Under State Program, $1 State = $1 spendable

Under Federal Program, $1 State = $5 spendable

Agenda

- Opening Remarks
- 2021 - 2025 Capital Plan Overview
- Roadmap into the Capital Plan
- **Federal Infrastructure Investment Update**

CTDOT Plan - Federal Infrastructure Investment

- CTDOT is accelerating the delivery of projects
  - “Shovel-worthy” projects vs. “Shovel-ready” projects
- Utilize existing shovel-ready projects that cover an array of categories and fit within potential categories for Federal Infrastructure Investment - be able to replace the dollar value with projects that were scheduled for future years.
- Initiating new work – Generally Type A (Clearly Defined Solutions) – with goal of achieving a short delivery time.
- Utilizing Alternative Contracting Methods such as Design-Build to provide flexibility


Questions?

Extra Slides

Time for CT

TIME FOR CT is based on the Department of Transportation's (CTDOT) New Haven Line Capacity and Speed Analysis Study, for which research was conducted in 2019.

The actionable plan aims to deliver the Lamont administration's vision for safe, reliable, and fast train service in Connecticut – saving people up to 10 minutes in their commutes by 2022. It also shows that with investment in infrastructure and the rail fleet, future super-express service will save people up to 25 minutes by 2035.

TIME FOR CT is an $8 to $10 billion comprehensive investment program that, with funding, can provide additional capacity and improve needs, frequency, and reliability throughout Connecticut.

https://www.railwayage.com/wp-content/uploads/2021/06/NHL-TIMEFORCT_-Exec-Summary-6_19_Viewlayout.pdf